METHOD AND APPARATUS FOR PROVIDING A VISUAL USER INTERFACE FOR AUDIO EQUALIZATION

TECHNOLOGICAL FIELD

[0001] An example embodiment relates generally to the presentation of a visual user interface for audio equalization and, more particularly, to the presentation of a visual user interface having first and second configurable elements that permit an audio equalization characteristic to be established in an intuitive manner.

BACKGROUND

[0002] Audio equalization has typically been provided by controlled movement of a plurality of sliders, each of which is associated with a respective frequency band. For example, an audio equalizer may include a plurality of sliders that may be adjusted in order to alter the gain of a respective frequency band. Typically, the plurality of sliders of an audio equalizer are positioned side-by-side with each slider configured to be moved vertically upwardly and downwardly in order to increase and decrease, respectively, the gain of a respective frequency band. Although audio equalizers may have mechanical sliders for adjusting the gain of respective frequency bands, graphical equalizers have a user interface with a plurality of sliders to facilitate interaction therewith.

[0003] An audio equalizer that includes a plurality of sliders associated with respective frequency bands may provide suitable control for audio professionals or others with substantial experience with respect to the individual adjustment of the gain of each of a plurality of frequency bands in order to optimize an audio presentation. However, other users may be less familiar with the nuances of audio equalization and, as such, may not be readily able to establish the ideal settings of an audio equalizer for different types of audio presentations, such as different genres of songs or other audio recordings. These other users may find the individual controls for the plurality of different frequency bands to be confusing and, in some instances, may simply set the sliders to one position without any further repositioning of the sliders, regardless of the type of audio recording to be presented.

[0004] As described by International Patent Application No. PCT/IB2011/052259, a more intuitive audio equalizer has been developed that permits a user to concurrent set both the audio equalization characteristics and the volume at which an audio recording will be presented. In this regard, a user interface is provided that serves as an audio equalizer. The user interface defines predefined regions having audio equalization characteristics, such as those associated with different genres of music, such as rock, classic, jazz and pop. As such, the selection of a point within a respective region of the user interface will cause a subsequent presentation of an audio recording to be presented with the audio equalization characteristics associated with the respective region. By relying upon the audio equalization characteristics that are associated with the different, a user may adjust the audio equalization characteristics for an audio recording in a more intuitive manner and without having to individually select the gain for a plurality of frequency bands.

BRIEF SUMMARY

[0005] A method, apparatus and computer program product are provided in accordance with an example embodiment in order to present an intuitive visual user interface for audio equalization. In accordance with an example embodiment, the method, apparatus and computer program product permit a first configurable element to be positioned upon the visual user interface so as to define the audio equalization characteristics associated therewith. The positioning of the first configurable element may be facilitated in an example embodiment by the definition of a plurality of locations upon that visual user interface that are associated with predefined audio equalization characteristics. The method, apparatus and computer program product of an example embodiment may also permit the audio equalization characteristics associated with the first configurable element to be modified, either by modification of the position of the first configurable element or via a second configurable element that provides a visual representation of the audio equalization characteristics based upon the location of the first configurable element. In at least some instances, following modification of the audio equalization characteristics with the second configurable element, the first configurable element may be relocated upon the visual user interface relative to the locations that have the predefined audio equalization characteristics in order to provide visual feedback to the user regarding the manner in which the audio equalization characteristics have been modified. Thus, the method, apparatus and computer program product of an example embodiment provide an intuitive visual user interface for audio equalization that permits audio equalization characteristics to be readily established and modified.

[0006] In an example embodiment, a method is provided that includes causing presentation of a visual user interface for audio equalization. The method may also include determining at least two locations upon the visual user interface. Each location is associated with a predefined audio equalization characteristic. The method of this embodiment also causes first and second configurable elements to be provided by the visual user interface. Further, the method of this embodiment includes associating, with a processor, an audio equalization characteristic with the first configurable element based upon a location of the first configurable element relative to the at least two locations. The second configurable element provides a visual representation of the audio equalization characteristic based upon the location of the first configurable element.

[0007] The method of an example embodiment may also include permitting modification of the audio equalization characteristic associated with first configurable element based upon interaction with the second configurable element. The method of this embodiment also includes determining an effect of the modification on the location of the first configurable element and causing a relocation of the first configurable element relative to the at least two locations based upon the effect of the modification. In an example embodiment, the method may cause a relocation of the first configurable element by defining an N-dimensional vector representative of the audio equalization characteristic associated with the first configurable element following the modification thereof. In this embodiment, the method may also cause a relocation of the first configurable element by mapping the N-dimensional vector to a corresponding location upon the visual user interface based upon a similarity of the N-dimensional vector to respective N-dimensional vectors of the at least two locations.